



## SEQUENCE LISTING

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<110> Blatt, Michael  
Leyman, Barbara

&lt;120&gt; Protein Involved in Abscisic Acid Signalling

&lt;130&gt; 2186PB-1

&lt;140&gt; 09/509,738

&lt;141&gt; 2000-03-30

&lt;160&gt; 44

&lt;170&gt; PatentIn version 3.0

&lt;210&gt; 1

&lt;211&gt; 1205

&lt;212&gt; DNA

&lt;213&gt; Nicotiana tabacum

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (18)..(917)

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Phe Arg Ala Asp Asp Gln Ser Asp Ser His Ala Ile Glu Met Gly Asp  
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Ile Thr Gly Val Asn Leu Asp Lys Phe Phe Glu Asp Val Glu Ala

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35

40

att aaa gac gaa ctc a <sub>aa</sub> ggc ctc gag a <sub>aa</sub> atc tat tcc caa ctc caa Ile Lys Asp Glu Leu Lys Gly Leu Glu Lys Ile Tyr Ser Gln Leu Gln • 45 50 55	194
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gcc a <sub>aa</sub> ttc atc a <sub>aa</sub> gtt cgt ctc gaa gcc tta gac aga tca a <sub>at</sub> gca Ala Lys Phe Ile Lys Val Arg Leu Glu Ala Leu Asp Arg Ser Asn Ala 95 100 105	338
gcg a <sub>at</sub> cga agc ctc cct gga t <sub>tg</sub> gga ccc gga a <sub>gt</sub> tca t <sub>ct</sub> gac agg Ala Asn Arg Ser Leu Pro Gly Cys Gly Pro Gly Ser Ser Asp Arg 110 115 120	386
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atg a <sub>at</sub> cag ttc a <sub>ac</sub> gag cta agg caa a <sub>ag</sub> atg gca t <sub>ct</sub> gaa t <sub>at</sub> agg Met Asn Gln Phe Asn Glu Leu Arg Gln Lys Met Ala Ser Glu Tyr Arg 140 145 150 155	482
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aag cac cag a <sub>ag</sub> a <sub>ac</sub> act aga a <sub>aa</sub> tgg act t <sub>gt</sub> ttt gct att att ctt	866

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Lys																
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Arg Tyr Tyr Thr Val Thr Gly Glu Asn Pro Asp Glu Ala Val Leu Asp  
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Thr Leu Ile Ser Thr Gly Gln Ser Glu Thr Phe Leu Gln Lys Ala Ile  
180 185 190

Gln Glu Gln Gly Arg Gly Gln Val Met Asp Thr Val Met Glu Ile Gln  
195 200 205

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His Gln Val Phe Leu Asp Met Ala Val Leu Val Glu Ser Gln Gly Ala  
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Gln Leu Asp Asp Ile Glu Ser Gln Val Asn Arg Ala Asn Ser Phe Val  
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Gly Val Gln Met Ala Asn Pro Ala Gly Ser Thr Gly Gly Val Asn Leu  
30 35 40  
gac aag ttc ttc gaa gat gtt gaa tct gtg aaa gaa gag cta aag gag 256  
Asp Lys Phe Phe Glu Asp Val Glu Ser Val Lys Glu Glu Leu Lys Glu  
45 50 55 60  
cta gat cgg ctc aac gaa aca ctc tct tca tgt cac gag cag agc aag 304  
Leu Asp Arg Leu Asn Glu Thr Leu Ser Ser Cys His Glu Gln Ser Lys  
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Thr Leu His Asn Ala Lys Ala Val Lys Asp Leu Arg Ser Lys Met Asp  
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ggg gac gtt gga gtc gcg ttg aag aag gcg aag atg att aaa gtt aaa 400  
Gly Asp Val Gly Val Ala Leu Lys Lys Ala Lys Met Ile Lys Val Lys  
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Leu Glu Ala Leu Asp Arg Ala Asn Ala Ala Asn Arg Ser Leu Pro Gly  
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Cys Gly Pro Gly Ser Ser Asp Arg Thr Arg Thr Ser Val Leu Asn  
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Gly Leu Arg Lys Lys Leu Met Asp Ser Met Asp Ser Phe Asn Arg Leu  
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Arg Glu Leu Ile Ser Ser Glu Tyr Arg Glu Thr Val Gln Arg Arg Tyr  
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Phe Thr Val Thr Gly Glu Asn Pro Asp Glu Arg Thr Leu Asp Arg Leu  
175 180 185  
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gat gac atc gag agt cat gtg ggt cga gct agc tcc ttt atc aga ggc Asp Asp Ile Glu Ser His Val Gly Arg Ala Ser Ser Phe Ile Arg Gly 255	260	265	880
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Glu Asp Val Glu Ser Val Lys Glu Glu Leu Lys Glu Leu Asp Arg Leu  
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Asn Glu Thr Leu Ser Ser Cys His Glu Gln Ser Lys Thr Leu His Asn  
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Ala Lys Ala Val Lys Asp Leu Arg Ser Lys Met Asp Gly Asp Val Gly  
85 90 95

Val Ala Leu Lys Lys Ala Lys Met Ile Lys Val Lys Leu Glu Ala Leu  
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Asp Arg Ala Asn Ala Ala Asn Arg Ser Leu Pro Gly Cys Gly Pro Gly  
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130 135 140

Lys Leu Met Asp Ser Met Asp Ser Phe Asn Arg Leu Arg Glu Leu Ile  
145 150 155 160

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165 170 175

Gly Glu Asn Pro Asp Glu Arg Thr Leu Asp Arg Leu Ile Ser Thr Gly  
180 185 190

Glu Ser Glu Arg Phe Leu Gln Lys Ala Ile Gln Glu Gln Gly Arg Gly  
195 200 205

Arg Val Leu Asp Thr Ile Asn Glu Ile Gln Glu Arg His Asp Arg Val  
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Lys Asp Ile Glu Lys Asn Leu Arg Glu Leu His Gln Val Phe Leu Asp  
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Met Ala Val Leu Val Glu His Gln Gly Ala Gln Leu Asp Asp Ile Glu  
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Ser His Val Gly Arg Ala Ser Ser Phe Ile Arg Gly Gly Thr Asp Gln  
260 265 270

Leu Gln Thr Ala Arg Val Tyr Gln Lys Asn Thr Arg Lys Trp Thr Cys  
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900  
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Arg Leu Arg Ile Ile His Arg Asp Leu Lys Ala Ser Asn Ile Leu Leu  
35 40 45

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<213> Ipomoea trifida

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20 25 30

Phe Arg Ile Ile His Arg Asp Leu Lys Ala Ser Asn Ile Leu Leu Asp  
35 40 45

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<213> brassica campestris

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Leu Lys Pro Gly Asn Ile Leu Leu Asp Lys Tyr Met Ile Pro Lys Ile  
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Arg Thr Asp Asn Ala Val Gly Thr  
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<213> Brassica oleracea

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Arg Ile Ile His Arg Asp Met Lys Pro Ser Asn Ile Leu Leu Asp Lys  
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Lys	Gln	Pro	Ala	Phe	Thr	Thr	Arg	Pro	Ser	Cys	Ser	Glu	Lys	Glu	Ser
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<213> Ipomoea trifida

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				20				25				30			

Lys	His	Pro	Gly	Phe	Cys	Leu	Gly	Ser	Arg	Pro	Ala	Asp	Met	Asp	Ser
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Ser	Thr	Ser	Asn	Cys	Asp	Glu	Ser	Cys	Thr	Val	Asn	Gln	Val	Thr	Val
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Thr Met Leu Asp Gly Arg  
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<213> brassica campestris

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Tyr Thr Trp Ser Val Ile Asp Ala Arg  
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<213> Brassica oleracea

<400> 13

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Ser Val Val Trp Met Leu Gly Ser Glu Ala Thr Asp Ile Pro Gln Pro  
20 25 30

Lys Pro Pro Ile Tyr Cys Leu Ile Thr Ser Tyr Tyr Ala Asn Asn Pro  
35 40 45

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Tyr Thr Cys Ser Val Ile Asp Ala Arg  
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<213> Nicotiana tabacum

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Met Leu Val Gly Asn Lys Cys Asp Leu Glu Asn Ile Arg Asp Val Ser  
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Ile Tyr Glu Gly Lys Asn Leu Ala Glu Glu Gly Leu Phe Phe Ile  
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Glu Thr Ser Ala Leu Asp Ser Thr Asn Val Lys Gln Pro Leu Lys Leu  
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35 40 45

Met Leu Val Gly Asn Lys Cys Asp Leu Glu Asn Ile Arg Ala Val Ser  
50 55 60

Ile Asp Glu Gly Lys Ser Leu Ala Glu Ala Glu Gly Leu Phe Phe Met  
65 70 75 80

Glu Thr Ser Ala Leu Asp Ser Thr Asn Val Lys Met Ala Phe Glu Met  
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100 105 110

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<212> PRT

<213> Lotus japonicus

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35 40 45

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Ile Glu Glu Gly Lys Ser Leu Ala Glu Ala Gln Gly Leu Phe Phe Met  
65 70 75 80

Glu Thr Ser Ala Leu Asp Ser Thr Asn Val Arg Thr Ala Phe Glu Met  
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100 105 110

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<210> 17

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<212> PRT

<213> Arabidopsis thaliana

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35 40 45

Met Leu Val Gly Asn Lys Cys Asp Leu Glu Asn Ile Arg Ala Val Ser  
50 55 60

Val Glu Glu Gly Lys Ala Leu Ala Glu Glu Glu Gly Leu Phe Phe Val  
65 70 75 80

Glu Thr Ser Ala Leu Asp Ser Thr Asn Val Lys Thr Ala Phe Glu Met ,  
85 90 95

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100 105 110

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<211> 124

<212> PRT

<213> Arabidopsis thaliana

<400> 18

Arg Phe Arg Ala Val Thr Ser Ala Tyr Tyr Arg Gly Ala Val Gly Ala  
1 5 10 15

Leu Val Val Tyr Asp Ile Thr Arg Ser Ser Thr Phe Glu Asn Val Gly  
20 25 30

Arg Trp Leu Asp Glu Leu Asn Thr His Ser Asp Thr Thr Val Ala Lys  
35 40 45

Met Leu Ile Gly Asn Lys Cys Asp Leu Glu Ser Ile Arg Ala Val Ser  
50 55 60

Val Glu Glu Gly Lys Ser Leu Ala Glu Ser Glu Gly Leu Phe Phe Met  
65 70 75 80

Glu Thr Ser Ala Leu Asp Ser Thr Asn Val Lys Thr Ala Phe Glu Met  
85 90 95

Val Ile Arg Glu Ile Tyr Ser Asn Ile Ser Arg Lys Gln Leu Asn Ser  
100 105 110

Asp Ser Tyr Lys Glu Glu Leu Thr Val Asn Arg Val  
115 120

<210> 19

<211> 124

<212> PRT

<213> Nicotiana tabacum

<400> 19

Arg Phe Arg Ala Val Thr Ser Ala Tyr Tyr Arg Gly Ala Phe Gly Ala  
1 5 10 15

Leu Val Val Tyr Asp Ile Thr Arg Arg Thr Thr Phe Asp Ser Ile Pro  
20 25 30

Arg Trp Leu Asp Glu Leu Lys Thr His Ser Asp Thr Thr Val Ala Arg  
35 40 45

Met Leu Val Gly Asn Lys Cys Asp Leu Asp Asn Ile Arg Ala Val Ser  
50 55 60

Val Glu Glu Gly Lys Ser Leu Ala Glu Ser Glu Gly Met Phe Phe Met  
65 70 75 80

Glu Thr Ser Ala Leu Asp Ala Thr Asn Val Asn Lys Ala Phe Asp Met  
85 90 95

Val Ile Arg Glu Ile Tyr Asn Ser Val Ser Arg Lys Val Leu Asn Ser  
100 105 110

Asp Ser Tyr Lys Ala Glu Leu Ser Val Asn Arg Val  
115 120

<210> 20

<211> 168

<212> PRT

<213> Nicotiana tabacum

<400> 20

Leu Ile Phe Ser Leu Glu Thr Phe Leu Leu Val Leu Phe Phe Thr  
1 5 10 15

Leu Val Ser Ser Ser Ala Ser Glu Ile Phe Phe Glu Glu Ser Phe Asp  
20 25 30

Asp Gly Trp Arg Ser Arg Trp Val Lys Ser Asp Trp Lys Ile Ser Glu  
35 40 45

Gly Lys Ala Gly Ser Phe Lys His Thr Ala Gly Thr Trp Ala Gly Asp  
50 55 60

Pro Asp Asp Lys Gly Ile His Thr Thr Asn Asp Ala Lys His Phe Ala  
65 70 75 80

Val Ser Ala Lys Ile Pro Glu Phe Ser Asn Lys Asn Arg Thr Leu Val  
85 90 95

Val Gln Tyr Ser Ile Lys Phe Glu Pro Asp Ile Glu Cys Gly Arg Gly  
100 105 110

Tyr Ile Lys Leu Leu Ser Gly Tyr Val His Pro Lys Lys Phe Gly Gly  
115 120 125

Asp Thr Pro Tyr Ser Phe Met Phe Gly Ala Asp Ile Cys Gly Ser Gln  
130 135 140

Thr Lys Lys Pro Ser Cys Leu Tyr Phe Pro Tyr Pro Gly Ala Glu Leu  
145 150 155 160

Pro Pro Leu Pro Glu Arg Asn Leu  
165

<210> 21

<211> 165

<212> PRT

<213> Arabidopsis thaliana

<400> 21

Asn Lys Leu Ser Phe Phe Cys Phe Phe Phe Leu Val Ser Val Leu Thr  
1 5 10 15

Leu Ala Pro Leu Ala Phe Ser Glu Ile Phe Leu Glu Glu His Phe Glu  
20 25 30

Gly Gly Trp Lys Ser Arg Trp Val Leu Ser Asp Trp Lys Arg Asn Glu  
35 40 45

Gly Lys Ala Gly Thr Phe Lys His Thr Ala Gly Lys Trp Pro Gly Asp  
50 55 60

Pro Asp Asn Lys Gly Ile Gln Thr Tyr Asn Asp Ala Lys His Tyr Ala  
65 70 75 80

Ile Ser Ala Lys Ile Pro Glu Phe Ser Asn Lys Asn Arg Thr Leu Val  
85 90 95

Val Gln Tyr Ser Val Lys Ile Glu Gln Asp Ile Glu Cys Gly Gly Ala  
100 105 110

Tyr Ile Lys Leu Leu Ser Gly Tyr Val Asn Gln Lys Gln Phe Gly Gly  
115 120 125

Asp Thr Pro Tyr Ser Leu Met Phe Gly Pro Asp Ile Cys Gly Thr Gln  
130 135 140

Thr Lys Lys Leu His Val Ile Val Ser Tyr Gln Gly Gln Asn Tyr Pro  
145 150 155 160

Ile Lys Lys Asp Leu  
165

<210> 22

<211> 82

<212> PRT

<213> Nicotiana tabacum

<400> 22

Gly Val Trp Met Glu Pro Asp Tyr Ala Lys Thr Ser Asp Ser Arg Lys  
1 5 10 15

Cys Leu Pro Ile Gly Glu Ala Glu Lys Glu Ala Phe Glu Glu Ala Glu  
20 25 30

Lys Val Arg Lys Ala Lys Glu Glu Glu Ala Gln Arg Ala Arg Glu  
35 40 45

Glu Gly Glu Arg Arg Lys Arg Glu Arg Gly Arg Asp Arg His Arg Asp  
50 55 60

Arg Tyr Lys Lys Arg Tyr His His Asp Tyr Met Asp Asp Tyr His Asp  
65 70 75 80

Glu Leu

<210> 23

<211> 85

<212> PRT

<213> Arabidopsis thaliana

<400> 23

Ile Leu Ile Cys Asp Asp Pro Ala Tyr Ala Arg Ser Ile Val Asp Asp  
1 5 10 15

Tyr Phe Ala Gln His Arg Glu Ser Glu Lys Glu Leu Phe Ala Glu Ala  
20 25 30

Glu Lys Glu Arg Lys Ala Arg Glu Asp Glu Glu Ala Arg Ile Ala Arg  
35 40 45

Glu Glu Gly Glu Arg Arg Lys Glu Arg Asp His Arg Tyr Gly Asp  
50 55 60

Arg Arg Arg Arg Tyr Lys Arg Pro Asn Pro Arg Asp Tyr Met Asp Asp  
65 70 75 80

Tyr His Asp Glu Leu  
85

<210> 24

<211> 310

<212> PRT

<213> Arabidopsis thaliana

<400> 24

Met Asn Asp Leu Met Thr Lys Ser Phe Met Ser Tyr Val Asp Leu Lys  
1 5 10 15

Lys Ala Ala Met Lys Asp Met Glu Ala Gly Pro Asp Phe Asp Leu Glu  
20 25 30

Met Ala Ser Thr Lys Ala Asp Lys Met Asp Glu Asn Leu Ser Ser Phe  
35 40 45

Leu Glu Glu Ala Glu Tyr Val Lys Ala Glu Met Gly Leu Ile Ser Glu  
50 55 60

Thr Leu Ala Arg Ile Glu Gln Tyr His Glu Glu Ser Lys Gly Val His  
65 70 75 80

Lys Ala Glu Ser Val Lys Ser Leu Arg Asn Lys Ile Ser Asn Glu Ile  
85 90 95

Val Ser Gly Leu Arg Lys Ala Lys Ser Ile Lys Ser Lys Leu Glu Glu  
100 105 110

Met Asp Lys Ala Asn Lys Glu Ile Lys Arg Leu Ser Gly Thr Pro Val  
115 120 125

Tyr Arg Ser Arg Thr Ala Val Thr Asn Gly Leu Arg Lys Lys Leu Lys  
130 135 140

Glu Val Met Met Glu Phe Gln Gly Leu Arg Gln Lys Met Met Ser Glu  
145 150 155 160

Tyr Lys Glu Thr Val Glu Arg Arg Tyr Phe Thr Val Thr Gly Glu His  
165 170 175

Ala Asn Asp Glu Met Ile Glu Lys Ile Ile Thr Asp Asn Ala Gly Gly  
180 185 190

Glu Glu Phe Leu Thr Arg Ala Ile Gln Glu His Gly Lys Gly Lys Val  
195 200 205

Leu Glu Thr Val Val Glu Ile Gln Asp Arg Tyr Asp Ala Ala Lys Glu  
210 215 220

Ile Glu Lys Ser Leu Leu Glu Leu His Gln Val Phe Leu Asp Met Ala  
225 230 235 240

Val Met Val Glu Ser Gln Gly Glu Gln Met Asp Glu Ile Glu His His  
245 250 255

Val Ile Asn Ala Ser His Tyr Val Ala Asp Gly Ala Asn Glu Leu Lys  
260 265 270

Thr Ala Lys Ser His Gln Arg Asn Ser Arg Lys Trp Met Cys Ile Gly  
275 280 285

Ile Ile Val Leu Leu Leu Ile Ile Leu Ile Val Val Ile Pro Ile Ile  
290 295 300

Thr Ser Phe Ser Ser Ser  
305 310

<210> 25

<211> 259

<212> PRT

<213> Homo sapiens

<400> 25

Met Asp Glu Phe Phe Glu Gln Val Glu Glu Ile Arg Gly Phe Ile Asp  
1 5 10 15

Lys Ile Ala Glu Asn Val Glu Glu Val Lys Arg Lys His Ser Ala Ile  
20 25 30

Leu Ala Ser Pro Asn Pro Asp Glu Lys Thr Lys Val Glu Leu Glu Glu  
35 40 45

Leu Met Ser Asp Ile Lys Lys Thr Ala Asn Lys Val Arg Ser Lys Leu  
50 55 60

Lys Ser Ile Glu Gln Ser Ile Glu Gln Glu Glu Gly Leu Asn Arg Ser  
65 70 75 80

Ser Ala Asp Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg  
85 90 95

Lys Phe Val Glu Val Met Ser Glu Tyr Asn Ala Thr Gln Ser Val Tyr  
100 105 110

Arg Glu Arg Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly  
115 120 125

Arg Thr Thr Thr Ser Glu Glu Leu Glu Asp Met Leu Glu Ser Gly Asn  
130 135 140

Pro Ala Ile Phe Ala Ser Gly Ile Ile Met Asp Ser Ser Ile Ser Lys  
145 150 155 160

Gln Ala Leu Ser Glu Ile Glu Thr Arg His Ser Glu Ile Ile Lys Leu  
165 170 175

Glu Asn Ser Ile Arg Glu Leu His Asp Met Phe Met Asp Met Ala Met  
180 185 190

Leu Val Glu Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val  
195 200 205

Glu His Ala Val Asp Tyr Val Glu Arg Ala Val Ser Asp Thr Lys Lys  
210 215 220

Ala Val Lys Tyr Gln Ser Lys Ala Arg Arg Lys Lys Ile Met Ile Ile  
225 230 235 240

Ile Cys Cys Val Ile Leu Gly Ile Val Ile Ala Ser Thr Val Gly Gly  
245 250 255

Ile Phe Ala

<210> 26

<211> 288

<212> PRT

<213> Homo sapiens

<400> 26

Met Lys Asp Arg Thr Gln Val Leu Arg Thr Arg Arg Asn Ser Asp Asp  
1 5 10 15

Lys Glu Glu Val Val His Val Asp Arg Asp His Phe Met Asp Glu Phe  
20 25 30

Phe Glu Gln Glu Glu Glu Ile Arg Gly Cys Ile Glu Lys Leu Ser Glu  
35 40 45

Asp Val Glu Gln Val Lys Lys Gln His Ser Ala Ile Leu Ala Ala Pro  
50 55 60

Asn Pro Asp Glu Arg Thr Lys Gln Glu Leu Glu Asp Leu Thr Ala Asp  
65 70 75 80

Ile Lys Lys Thr Ala Asn Lys Val Arg Ser Lys Leu Lys Ala Ile Glu  
85 90 95

Gln Ser Ile Glu Gln Glu Gly Ser Thr Ala Pro Arg Pro Ile Leu  
100 105 110

Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg Lys Phe Val Glu  
115 120 125

Val Met Thr Glu Tyr Asn Ala Thr Gln Ser Lys Tyr Arg Asp Arg Cys  
130 135 140

Lys Asp Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly Arg Thr Thr Thr  
145 150 155 160

Asn Glu Glu Leu Glu Asp Met Leu Glu Ser Gly Lys Leu Pro Ile Phe  
165 170 175

Thr Asp Asp Ile Lys Met Asp Ser Gln Met Thr Lys Gln Ala Leu Asn  
180 185 190

Glu Ile Glu Thr Arg His Asn Glu Ile Ile Lys Leu Glu Thr Ser Ile  
195 200 205

Arg Glu Leu His Asp Met Phe Val Asp Met Ala Met Leu Val Glu Ser  
210 215 220

Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu His Ser Val  
225 230 235 240

Asp Tyr Val Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys Tyr  
245 250 255

Gln Ser Lys Ala Arg Arg Lys Lys Ile Ile Ile Ile Cys Cys Val  
260 265 270

Val Leu Gly Val Val Leu Ala Ser Ser Ile Gly Cys Thr Leu Gly Leu  
275 280 285

<210> 27

<211> 291

<212> PRT

<213> Drosophila melanogaster

<400> 27

Met Thr Lys Asp Arg Leu Ala Ala Leu His Ala Ala Gln Ser Asp Asp  
1 5 10 15

Glu Glu Glu Thr Glu Val Ala Val Asn Val Asp Gly His Asp Ser Tyr  
20 25 30

Met Asp Asp Phe Phe Ala Gln Val Glu Glu Ile Arg Gly Met Ile Asp  
35 40 45

Lys Val Gln Asp Asn Val Glu Glu Val Lys Lys Lys His Ser Ala Ile  
50 55 60

Leu Ser Ala Pro Gln Thr Asp Glu Lys Thr Lys Gln Glu Leu Glu Asp  
65 70 75 80

Leu Met Ala Asp Ile Lys Lys Asn Ala Asn Arg Val Arg Gly Lys Leu  
85 90 95

Lys Gly Ile Glu Gln Asn Ile Glu Gln Glu Glu Gln Gln Asn Lys Ser  
100 105 110

Ser Ala Asp Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg  
115 120 125

Lys Phe Val Glu Val Met Thr Glu Tyr Asn Arg Thr Gln Thr Asp Tyr  
130 135 140

Arg Glu Arg Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly  
145 150 155 160

Arg Pro Thr Asn Asp Asp Glu Leu Glu Lys Met Leu Glu Glu Gly Asn  
165 170 175

Ser Ser Val Phe Thr Gln Gly Ile Ile Met Glu Thr Gln Gln Ala Lys  
180 185 190

Gln Thr Leu Ala Asp Ile Glu Ala Arg His Gln Asp Ile Met Lys Leu'  
195 200 205

Glu Thr Ser Ile Lys Glu Leu His Asp Met Phe Met Asp Met Ala Met  
210 215 220

Leu Val Glu Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr His Val  
225 230 235 240

Glu His Ala Met Asp Tyr Val Gln Thr Ala Thr Gln Asp Thr Lys Lys  
245 250 255

Ala Leu Lys Tyr Gln Ser Lys Ala Arg Arg Lys Lys Ile Met Ile Leu  
260 265 270

Ile Cys Leu Thr Val Leu Gly Ile Leu Ala Ala Ser Tyr Val Ser Ser  
275 280 285

Tyr Phe Met  
290

<210> 28

<211> 6

<212> PRT

<213> Nicotiana tabacum

<400> 28

Leu Gln Val Ala Arg Lys  
1 5

<210> 29

<211> 6

<212> PRT

<213> Drosophila melanogaster

<400> 29

Thr Lys Lys Ala Leu Lys  
1 5

<210> 30

<211> 6

<212> PRT

<213> Rattus sp.

<400> 30

Thr Lys Lys Ala Val Lys  
1 5

<210> 31

<211> 6

<212> PRT

<213> yeast sp.

<400> 31

Thr Asp Lys Ala Val Lys  
1 5

<210> 32

<211> 6

<212> PRT

<213> yeast sp.

<400> 32

Thr Asn Lys Ala Val Lys  
1 5

<210> 33

<211> 13

<212> PRT

<213> Nicotiana tabacum

<400> 33

Asp Gln Ser Asp Ser His Ala Ile Glu Met Gly Asp Ile  
1 5 10

<210> 34

<211> 5

<212> PRT

<213> Nicotiana tabacum

<400> 34

Gly Cys Gly Pro Gly  
1 5

<210> 35

<211> 25

<212> PRT

<213> Nicotiana tabacum

<400> 35

Leu Glu Arg Asn Leu Lys Glu Leu His Gln Val Phe Leu Asp Met Ala  
1 5 10 15

Val Leu Val Glu Ser Gln Gly Ala Gln  
20 25

<210> 36

<211> 25

<212> PRT

<213> Arabidopsis thaliana

<400> 36

Ile Glu Lys Ser Leu Leu Glu Leu His Gln Val Phe Leu Asp Met Ala  
1 5 10 15

Val Met Val Glu Ser Gln Gly Glu Gln  
20 25

<210> 37

<211> 25

<212> PRT

<213> Homo sapiens

<400> 37

Leu Glu Asn Ser Ile Arg Glu Leu His Asp Met Phe Met Asp Met Ala  
1 5 10 15

Met Leu Val Glu Ser Gln Gly Glu Met  
20 25

<210> 38

<211> 20

<212> PRT

<213> Nicotiana tabacum

<400> 38

Ile Ile Leu Leu Leu Ile Ile Ile Leu Val Val Val Leu Ser Ile Gln  
1 5 10 15

Pro Trp Lys Lys  
20

<210> 39

<211> 22

<212> PRT

<213> Arabidopsis thaliana

<400> 39

Ile Ile Val Leu Leu Leu Ile Ile Leu Ile Val Val Ile Pro Ile Ile  
1 5 10 15

Thr Ser Phe Ser Ser Ser  
20

<210> 40

<211> 21

<212> PRT

<213> Homo sapiens

<400> 40

Ile Ile Ile Cys Cys Val Ile Leu Gly Ile Val Ile Ala Ser Thr Val  
1 5 10 15

Gly Gly Ile Phe Ala  
20

<210> 41

<211> 20  
<212> DNA  
<213> Artificial sequence

<220>  
<221> misc\_feature  
<222> (1)..(20)  
<223> primer

<400> 41  
taatacgact cactataggg

20

<210> 42  
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<212> DNA  
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<221> misc\_feature  
<222> (1)..(17)  
<223> primer

<400> 42  
gtaaaacgac ggccagt

17

<210> 43  
<211> 19  
<212> DNA  
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<220>  
<221> misc\_feature

<222> (1)...(19)

<223> primer

<400> 43

ggaaacagct atgaccatg

19

<210> 44

<211> 13

<212> PRT

<213> keyhole limpet haemocyanin

<400> 44

Cys Gly Pro Gly Ser Ser Ser Asp Arg Thr Arg Thr Ser  
1 5 10



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Application No.: 09/ 509738

**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- 7. Other: the specification and the claims do not have sequence identification numbers at each sequence as required by 37 CFR 1.821(d).

**Applicant Must Provide:**

- An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

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